California Franchise Tax Board (FTB)

Enterprise Architecture Definition
Enterprise Content Management (ECM)

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Table of Contents

List of Figures

1.0 Executive Summary and Charter

Enterprise Content Management (ECM) is strategies and technologies employed to manage documents and content across the enterprise. ECM should be able to work with a variety of content that needs to be managed. The ECM ESO provides an architecture strategy that will address all current and future departmental ECM needs while also being a scalable, portable, dynamic service.

1.1 Overview

Document processing is a main business function at FTB. An opportunity exists to establish an Enterprise Content Management (ECM) service that would include imaging processes that scan paper documents, creating digital images from electronic notices, and routing images across the enterprise. ECM at FTB will be employed to capture, store, search, secure and control access, control versions, retrieve, distribute, preserve end destroy documents and content.

1.2 Scope

The ECM EAD defines the current and future states of FTB's content management, a gap analysis and a strategy for implementation. The following list contains the subject areas covered:

- Incoming and outgoing content
- Content to Data Conversion
- Distribution and access of services for content
- Storage of content

1.3 ESO High-level Requirements

The following table outlines the high-level requirements of Enterprise Content Management within FTB.

Figure 1.3-1: ECM ESO - Integrated Requirements

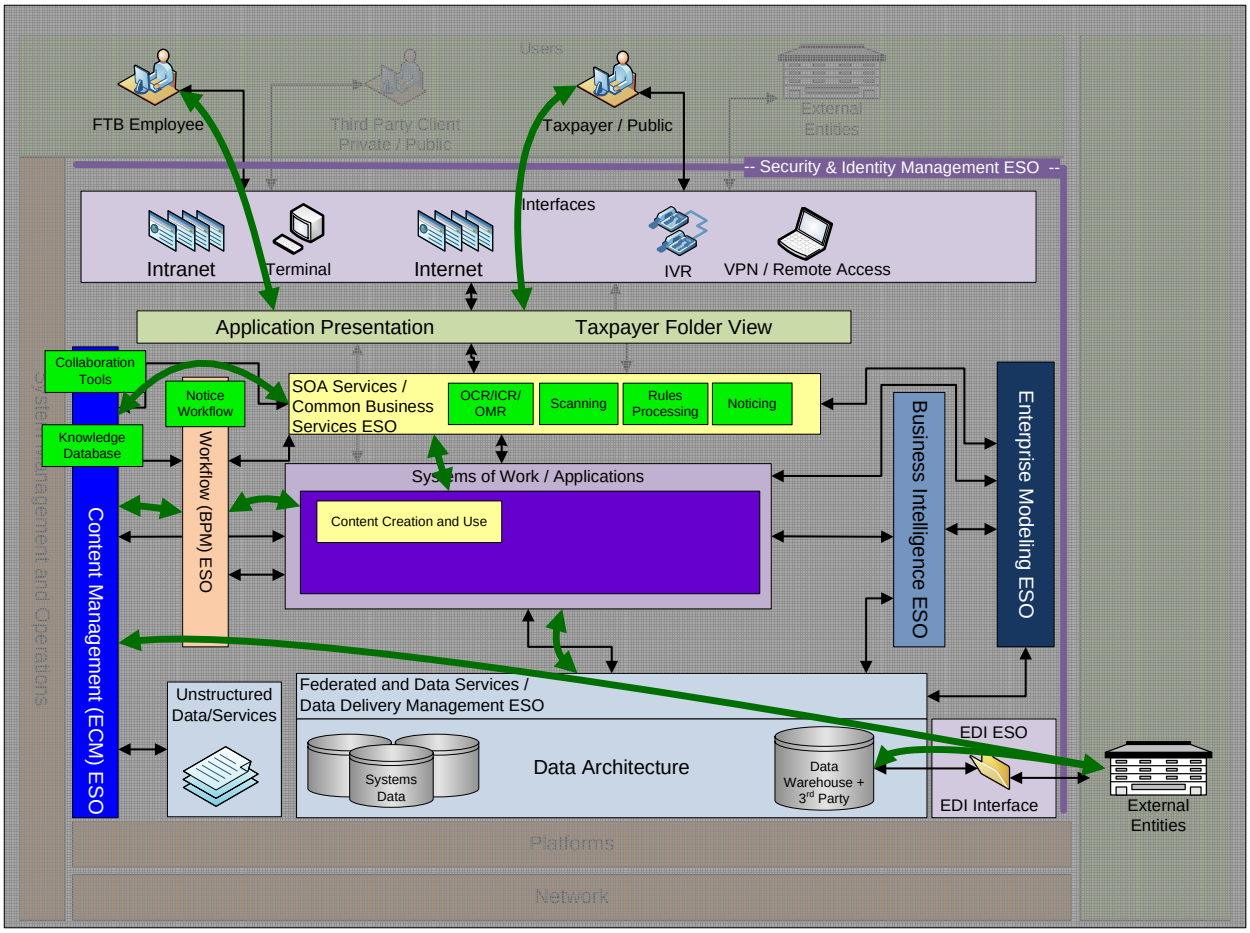
Requirement	Description
Content Delivery	The ECM implementation will support the delivery of content to the enterprise via services and display components.
Federation	The ECM implementation will allow federation of content across the enterprise
Multiple content types	The ECM implementation will allow for multiple content types such as PDF or Word documents, TIFF images, emails, faxes, audio and video files, etc.
Integration with scanning services	The ECM implementation will be accessible to the scanning processes for uploading scanned images via services.
Classification	The ECM implementation will allow all content to be associated with an entity such as a taxpayer and a context such as an audit. Other forms of classifications will be provided such as categories and types. This is also called meta tagging and is a crucial part of the strategy. This involves close working with the business folks.
Integration with Notice services	The ECM implementation will integrate with or coexist with the enterprise notice system to provide notice templates, template versioning and template variations. The ECM implementation will provide a repository for notices that are created or visual representations of electronic notices.
Workflow	The ECM implementation will contain or utilize workflow capabilities to enable collaboration and document approvals.

Requirement	Description
Version and variation control	The ECM implementation will support the management of document versions and variations for language or output type.
Service Oriented	The ECM implementation will provide services for interfacing and receiving or storing content.
Searchable	The ECM implementation will provide search functionality so that documents are discoverable through various means.
Collaboration	The ECM implementation will support collaboration among users through document creation, information dissemination, scheduling, calendaring or other tools needed for team collaboration.
Scalable	The ECM implementation will be scalable enough to handle the volumes of information that will be stored
Expiration and retention	The ECM implementation will support automated management of retention policies. Again, business involvement required here to first standardize on policies and rules, access control etc.
Security	The ECM implementation will support departmental security policies and guidelines.

1.4 Conceptual Model

The following diagram shows infrastructure services relevant to the ECM ESO with relationships between components. Content is created internally or comes from external sources. ECM content will be stored in a centralized location within the enterprise and functionality such as version control, workflow, or other services will be provided.

Figure 1.4-1: ECM ESO – "To Be" Conceptual Model



2.0 Current Architecture

2.1 Current Capabilities and Components

Currently, FTB does not have an "enterprise" ECM system or process. Numerous systems and processes are being used to perform the department's ECM needs. FTB has an informal limited "ECM" governance structure. To describe FTB's current ECM capabilities, FTB's ECM attributes are listed below:

- **Capture**: Content is created departmentally through three main input systems, Tandem, IPACS, E-gateway. There are also other input processes for 3rd party data, white mail, tax supporting documents, etc. These are received in a variety of methods; fax, phone conversations, white mail, FTP, on-line, paper receipt, etc. Additionally, numerous in-house processes exist that generate content within FTB to support our business functions.
- **Manage**: Content is managed through folder organization and/or file name variations. Our Tax documents management is the most mature process using the IPACS and E-gateway database and storage platforms. Other FTB processes use a variety of tools and processes like Microsoft SharePoint, Serena PVCS Version Manager, Microsoft Visual SourceSafe, IBM Rational ClearQuest, etc.
- **Store and Retrieve**: Content storage and retrieval is performed numerous ways. Storage is performed for both paper and electronic processes in a variety of methods, from paper storage in the warehouse to electronic storage on a server/SAN system. Retrieval is performed in a variety of methods, from actual manual paper file pulling and routing to automatic electronic workflow routing. Our two main current retrieval applications for tax documents are the e-View and IDAX applications.
- **Preserve**: The long-term retention of our content is being performed numerous ways with redundancy across the systems that perform these functions. Retention timeframes vary from system to system and are controlled by different methods and processes, from batch processing to manual updates.
- **Deliver**: Content delivery varies from system to system. From case management tools to applications designed specifically to deliver and control content, E-view and IDAX.
- **Collaboration**: Other than independent and manual processes, we don't share content in a centralized fashion or method except for some in-house tax document processing systems.
- **Security**: Security is controlled independently from platform to platform and is usually controlled within the application by the use of an access/authorization table.

2.1.1 Current ECM workloads

Figure 2.1-1: Imaging Categories and Volumes

Category	Number of Workloads	One-time Imaging Estimates	Monthly Imaging Estimates
1(a) – (*Minimum Value)*	7	-	2,695 pages
1(b) – (*Existing Storage and Retrieval)*	148	381,290 files	453,623 pages
1(c) – (*Existing Data Collection)*	15	160,000 pages	79,373 pages
2 – (*Additional Tech. Capabilities)*	31	50,000 files	107,714 pages
Scan & Shred Phase I	29	-	4,583,333 pages

2.1.2 Electronic Content Types

FTB identified 741 examples of electronic content being used or created by the department. Of the 741 examples, there were many duplicates and overlapping circumstances.

Figure 2.1-1: Electronic Content Types

EC Category	Response Examples
Business Process Rules & Procedures	ARM Procedure Manuals, ARCS Release Planning, Audit Procedure Manuals, Strategic Plans
System / Technical	Schema Documents, System Change Requests, ARCS E-Lien Electronic Files, PASS Help File
Web	Web Forms, Bureau Web Pages, Web Procedures
Training	Training Materials, Training Brochures, Training Schedules, Training Presentations
Project	Project Plans, Project Charters, Project Documents, Project Templates
Financial / Budget	Financial Reports, Financial Statement Worksheets, Budget Change Proposal, Schedule 3 Documents
Business Performance / Management Reports	Monthly Reports, Inventory Reports, Business Plan, Annual Report, Statistical Reports
Administrative	Organizational Flow Charts, Meeting Agendas, Meeting Minutes, Duty Statements
Taxpayer Related	Taxpayer Notices, Taxpayer Correspondence, Revenue Report, Audit Work Papers
Taxation Related	Tax Publications, Legislative Change Proposals, Tax Schedules
Miscellaneous	Email, Compressed Files, Data Files

2.1.2.1 Electronic Content Attributes

The percentages represented below are a cross section of FTB.

- **Capture**: Over 70% of the electronic content types are created using a Microsoft product (Word, Excel, Visio, PowerPoint, Publisher, Outlook, FrontPage, Project, Access, Internet Explorer, .NET). A distant 2nd was Adobe Acrobat/Reader with 6%.

- **Manage**: Managing electronic content (i.e. version control) is accomplished through folder organization and/or file name variations 70% of the time. The majority of FTB's sections are not clear on what version control is. 25% listed 'Other' tools that are listed below. *(Note; "ERoom, Autoforms, IBM Rational ClearQuest, McAfee HelpDesk and Macromedia RoboHelp are not considered version control tools. It may also be possible that these tools are being used to manage electronic content even if that is not their primary function.)*

    - Microsoft SharePoint
    - Serena PVCS Version Manager
    - Microsoft Visual SourceSafe
    - Interwoven TeamSite

- eRoom
- Autoforms
- IBM Rational ClearQuest
- McAfee HelpDesk
- Macromedia RoboHelp

- **Store and Retrieve**: 90% of contact at FTB is easily located; however, survey results indicate redundancy is an issue.

- **Preserve**: 70% of FTB is not concerned with the need to centralize and automate the retention of content.

- **Deliver**: Over 60% of electronic content is either routed from or routed to others. In addition, 43% have workflows that are not automated and 28% of FTB does not know.

- **Collaboration**: 56% of the electronic content requires collaboration. This is done through email and shared network folders. 20% of all electronic content types are shared with others external to FTB.

- **Security**: Approximately 43% of the electronic content requires identity management.

- **Current Content Management Solutions at FTB**: The solutions listed in the following tables are identified as tools used for version management of electronic content. The tools listed in the table on the left are identified as true Content Management solutions per Enterprise Architecture. The tools listed in the table on the right are not traditionally used to manage content but are identified as being used in that manner.

Figure 2.1-2: FTB Content Management Tools

Version Management Tool (Vendor)
eRoom (EMC Documentum)
SharePoint (Microsoft)
Natural ISPF (Software AG)
Visual SourceSafe (Microsoft)
PVCS Version Manager (Serena Software)
Teamsite (Interwoven)

Tool used for Version Management (Vendor)
AutoForms (Adcorr)
ARCS
Extra Personal Client (Attachmate)
Brio
CalATERS
Crystal Reports (Seagate)
CUT
eManual
Encryption
Rational ClearQuest (IBM)
Rational Robot (IBM)
INC
Macromedia - RoboHelp
McAfee - HelpDesk
Office – Excel, Project, Visio (Microsoft)
SQL Reporting Service (Microsoft)
New Tax Comp

PAPPE
PASS System
PAWS
SENDIT
SMARTrac
TI Mainframe

3.0 Target Capabilities and Components

This section will outline the future vision for an ECM process within FTB. The goal of the architecture is to provide an architecture that will address all current and future departmental ECM needs while being a scalable, portable, dynamic service.

The major components needed to consolidate workloads into “enterprise” ECM processes have already been purchased. By leveraging our current capabilities and expanding these capabilities, we could assemble the resources to target short-term gains, and address the long-term goal of providing FTB enterprise content management services.

- **Capture**: Both electronic and paper content will be funneled through a centralized common process for validation, storage, delivery, retention, etc. Routing through a common process allows ”enterprise” services to be utilized. Electronic content will continue to be collected in its current methods but now funneled through a centralized process. Paper content will be collected using two input methods, centralized scanning and satellite scanning. Centralized scanning will be by a common departmental system that would handle our large volume workloads. Satellite scanning will take place at the documents originating source and would handle sensitive, white mail, field scanning processes, small workloads, administrative processes and tax supporting documents. Satellite scanning images will be routed from the satellite locations through the central common imaging pipeline into the centralized archive for storage and retention.
- **Manage**: Specialized Enterprise ECM systems exist based on content category types. Tax workloads use archives to process and store the content outside of the databases and have a “pointer” to the content. This saves on overall database size, recoverability, back-up times, etc.
- **Store and Retrieve**: Storing all content into a centralized archive will provide a single point for the management, storage, retrieval, delivery, collaboration, and security. The archives will also contain documents from FTB’s out-going processes. (Example: Notices, correspondence, etc.)
- **Preserve**: Storing all content into a centralized archive will allow for consolidation of retention timelines. Retention will be automated and will be based on workflow and case management processes.
- **Deliver**: Establishment of an enterprise document viewing service. Establishing a single enterprise document viewing service will provide greater efficiency and reduce costs incurred by maintaining separate applications/processes. Any system or application will use the service.
- **Collaboration**: ECM Collaboration will be identified and provided through business process management (workflow/case management) Architecture Definition Document.
- **Security**: ECM security falls into three main areas; authorization, authentication, electronic data interchange. These discussions will be deferred to the Identity and Access Management and Electronic Data Interchange Architecture Definition documents.

3.1 Enterprise Governance

Organizational structure and governance is important to facilitate an effective long-term ECM process. The consensus in the ECM industry is projects fail due to governance, tool complexity and cost issues and lack of defined business needs and objectives. FTB’s validated these studies by performing interviews of 40 sections identifying and defining the ECM attributes that are currently being stored throughout the department. As suggested, the findings determined

organizational structure and governance that support ECM must be in-place and are crucial to the success of any future ECM processes. FTB determined there are three layers of organizational structure and governance needed to support our ECM solution; Forms Design and Governance, Business Design and Governance, and IT Design and Governance.

3.1.1 Forms Governance

The forms design and re-design processes will be standardized to minimize form review, coding, testing and implemented by both FTB and the Tax Form Vendor Community. Governance of this process will be necessary to ensure enterprise design standards and vendor accountability are developed, kept and maintained.

A Tax Forms and Notices Action Team will perform forms Governance. The team will provide forms governance, standards, and policies.

The Forms Advisory Committee will provide governance in the following areas:

1. Provide recommendations for redesign on any notice or form FTB receives or generates, including tax forms, billing notices and audit notices. Provide recommendations for design on new forms and notices utilizing industry standard design techniques and best practices.
2. Recommend improvements to the process of form development design and review.
3. Discuss and recommend improvements to the workflow of forms through the processing pipeline.
4. Discuss the impact of legislation on forms and notices at an enterprise level.
5. Disseminate historical knowledge related to forms design.

3.1.2 Business Governance

A governance process will be enacted to oversee, guide, direct, enforce and administer ECM through project phases. FTB will take an enterprise approach to provide consolidated enterprise governance. Tasks include:

1. Division level agreements on data capture priorities/objectives to best support TSM.
2. Division level agreements on ECM priorities/objectives to best support TSM.
3. FTB forms standards to software company vendors and preparers to facilitate data capture.
4. Determine data capture and ECM priorities (White Mail, Tax Forms, Supporting Documents, Image Task Force Workloads) for structured and unstructured workloads to allow for phased-in approach to “all” data to support TBO’s and EBO’s.
5. Stop rogue imaging, data capture, and ECM projects and sub-systems and enforce enterprise ECM approach.
6. Determine if manual data entry methods are obsolete and transfer current manual data entry workloads to OCR/ICR capture based systems.

3.2 Information Technology (IT) Governance

The Enterprise Architecture Solution Architects will lead a group of Subject Matter Experts to provide enterprise-focused recommendations on:

1. Data Capture to best support ECM.
2. Data Management to best support ECM.
3. Data Storage and Retrieval to best support ECM.
4. Data Preservation to best support ECM.

5. Data Delivery to best support ECM.
6. Data Collaboration to best support ECM.
7. Data Security to best support ECM.
8. Stopping rogue imaging, data capture, and ECM projects and sub-systems and enforce enterprise ECM approach.

4.0 Gap Analysis

4.1 Imaging Categories

This section will overview recommendations and tie them together with external studies on how to implement a long-term departmental ECM ESO solution.

Each workload is placed in one of two categories. Category 1 includes workloads that will be imaged using current in-house scanning capabilities, and, Category 2 includes workloads that cannot be imaged using current in-house scanning capabilities and will require the purchase of additional technical capabilities. Category 1 is further divided into three sub-categories explained below.

Category 1(a) - Minimum Image Value: These 7 workloads are not recommended for imaging for one or more of the following reasons: the workload is not referred back to once initial processing is complete, the workload is already, or in the process of, being converted to an on-line form, or the workload is currently processed electronically.

Category 1(b) - Image Value from existing Storage and Retrieval Capabilities: These 148 workloads will be imaged for archiving purposes (to save filing, storage, and retrieval costs) using current departmental capabilities.

Category 1(c) - Image Value from existing Data Capture Capabilities: These 15 workloads will be imaged for field level data capture purposes (field-level OCR) to save manual data collection costs, using current departmental capabilities.

Category 2 - Image Value from Purchasing Additional Technical Capabilities: Imaging these 31 workloads require purchasing additional technical capabilities for full text searches using full page Optical Character Recognition (OCR).

4.2 Imaging Strategies

The following addresses the department's short and long-term imaging needs, provides an enterprise-wide approach to providing imaging capabilities, and addresses the departmental imaging issues.

- **Expand imaging capabilities** –FTB would benefit from expanding its current tax document and payment imaging capabilities to include tax returns and payments that aren't currently being processed through the Imaging Services Section. Secondly, the department will realize significant gain by expanding imaging to include both documents supporting tax processing (Example: tax-related legal documents and tax-related correspondence, etc.) and documents that support the non-tax administration of FTB. (Example: personnel records/documents, non-tax related legal documents, non-tax related correspondence, exams, etc.).
- **Centralize imaging operations** – The consolidation of departmental imaging into one pipeline process has already been planned and funded. By leveraging our current IPACS capabilities and expanding these capabilities, we will assemble the resources to address short-term gains, and address the long-term goal of providing FTB an enterprise ECM system.

There are a few sensitive white mail and field office workloads that will take place at their originating source through satellite scanning equipment. Images will be routed from the satellite locations through the central imaging pipeline to utilize pipeline data collection, storage and retrieval functions built into a departmental ECM process.

- **Establish a centralized document archive**. Storing all post processing data and images from the IPACS and E-gateway systems into a central document archive will provide a single point of data retention for both input systems and also allow for a single "enterprise document viewer" application replacing the current IDAX and E-View applications. It will allow pre-build and storage of "virtual" images in PDF. This will minimize the requestor access times, possibly eliminating the mainframe file and print services. The archives will contain documents from FTB's out-going processes. (Example: Notices, correspondence, etc.)

- **Establish an "enterprise document viewer" application** – Establishing an enterprise document viewer will provide greater efficiency and reduce costs incurred maintaining two separate applications. It will provide a limited view of the data, minimize requestor access times, and possibly eliminate the mainframe file and print services.

- **Provide the ability to view and route imaged documents –** While storing electronic images rather than paper documents will reduce storage and retrieval costs, moving to a truly "paperless" processing environment necessitates resolving 2 key issues:
  - **Issue #1** - Providing users with a means for simultaneously displaying, in full-screen, an "image viewer" and a data entry application. System engineering is currently testing two options to resolve this problem: (1) provide users with a wide-screen monitor that accommodates the simultaneous opening of two full-page applications; or (2) provide users with a second "dual screen" monitor, with one monitor serving as the viewer and the other displaying the data entry application. While desktop computers will accommodate up to 2 monitors, laptops will only accommodate 1 monitor making it likely that employing both Options 1 and 2 may become necessary.
  - **Issue #2** - Providing basic workflow routing capabilities. The Imaging Services Section, which performs workflow routing for the IPACS imaging system could be expanded to provide departmental workflow routing.

- **Develop a scalable imaging system** - To meet both current and future demands, FTB will implement a scalable system that can accommodate new workloads by adding additional hardware/software resources.

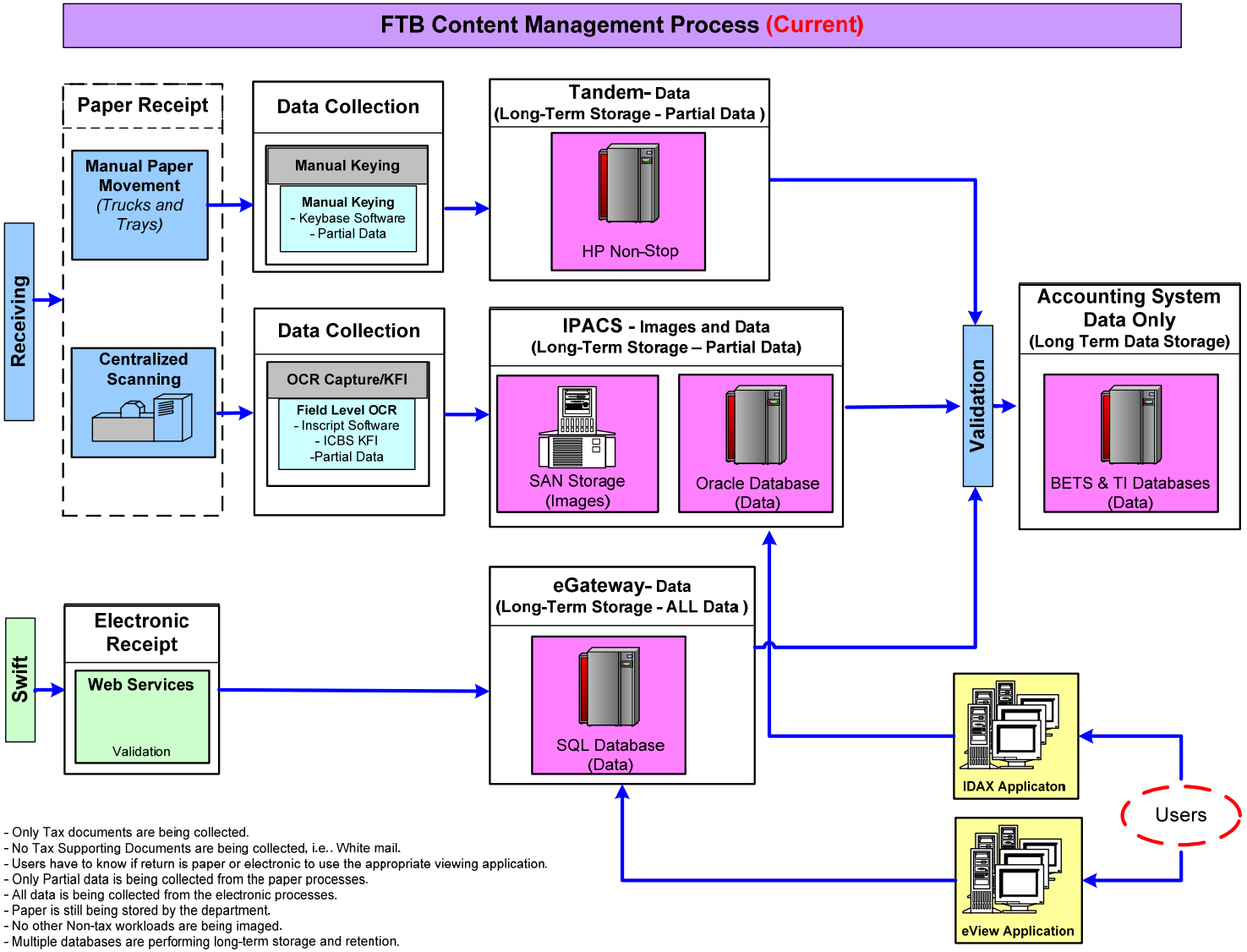
GAP	Success Factor	Benefit	Risk
Not "all" data effectively and efficiently collected.	Capture processes will be expanded to include all forms and workloads		
Workloads (forms) are not designed for cost effective OCR/ICR data capture and would need to be redesigned to facilitate OCR/ICR collection.	Forms to be redesigned to facilitate OCR/ICR collection Enhance automatic date collection Forms standardized departmentally to		

	minimize form review, coding, testing and implemented by both FTB and the Tax Form Vendor Community ECM governance process will be necessary to ensure enterprise design standards and vendor accountability		
Disparate imaging processes	Consolidation of departmental imaging into one pipeline process		
Disparate data retention achieves	Store all post processing data and images into a central document archive	Allow for a single “enterprise document viewer” Minimize the requestor access times, possibly eliminating the mainframe file and print services.	
No centralized document viewer	Establish an “enterprise document viewer” application	Provide greater efficiency and reduce costs incurred maintaining two separate applications	
Storing both paper and electronic documents	Store only electronic documents		

5.0 Roadmap

The following is the phase-in departmental ECM processes from our current systems, capabilities and workloads. Although, imaging, data capture, or consolidation of most workloads will provide departmental gains, it is not realistic to be able to implement the processes in a single project phase. FTB will need to determine workload precedence and priority for phasing in our long-term ECM services. There are four main phases outlined below. Some of the phases contain the same project type since these are on-going projects that stretch across multiple phases. For Example: To perform data capture from “all” documents we will need to use OCR/ICR technologies. In doing this we will eventually phase out the current manual paper data collection system (Tandem) into an OCR/ICR data collection system (IPACS). Since Tandem consists of 30 different workloads, it is not realistic to transition all of these workloads to IPACS during a single project or phase. With that, three phases list the project “Move Manual Data Entry processes from Tandem to OCR/ICR KFI processes on IPACS”. Phase 1 of the project might be 10 workloads, phase 2 might be the next 10 workloads and phase 3 might be the remaining 10 workloads. Supporting architecture based diagrams showing each of the four main ECM phases. Adopting and using standards for each content category type will make a later implementation of an overall ECM process much more feasible versus our current ECM methods and practices.

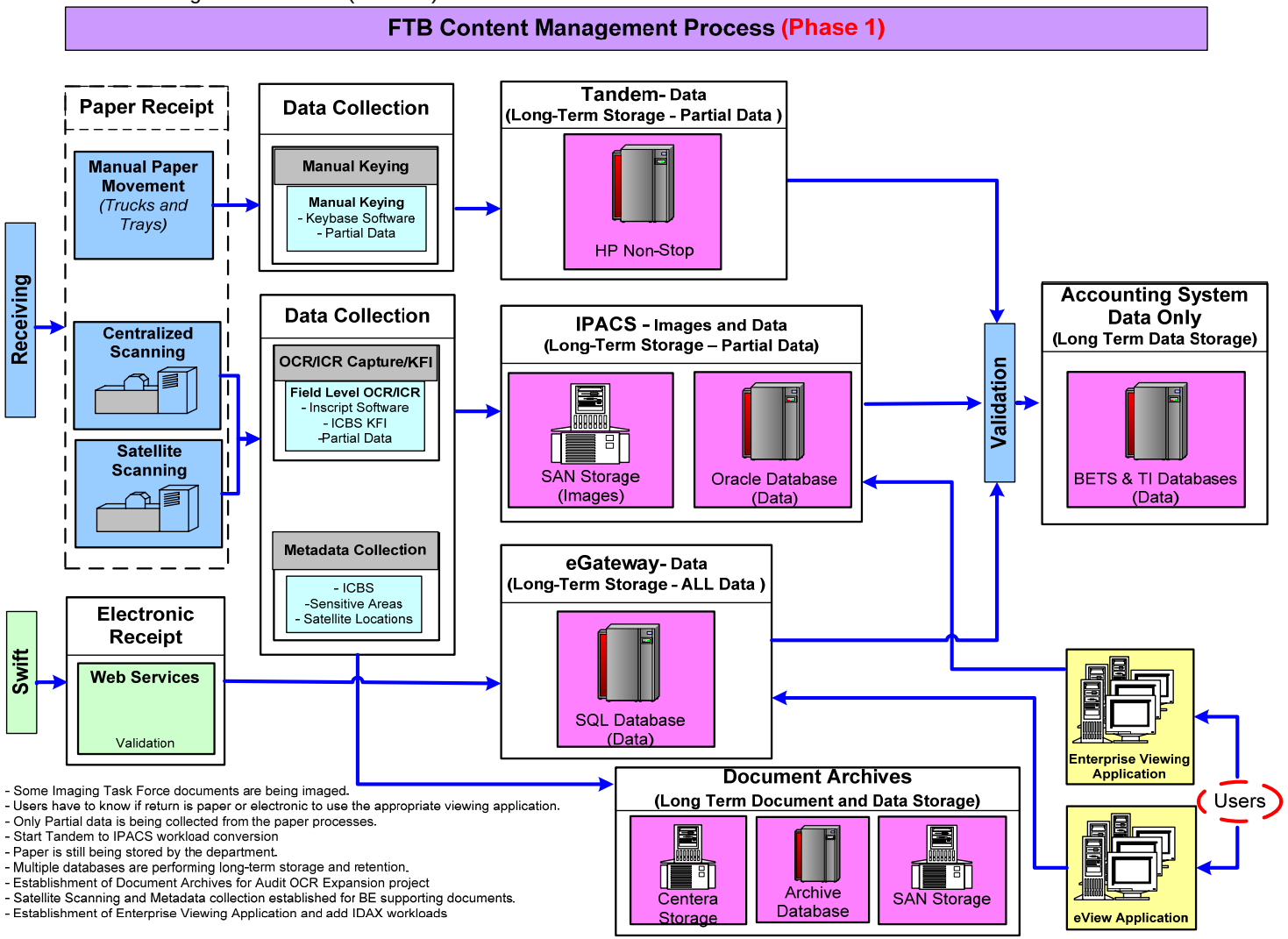
Figure 5.1-1: FTB Content Management Process (Current)



5.1 Phase 1

ECM Attribute	Opportunity –	Project
Capture	Expand & Capture All Return Data – Return Filing & Validation TBO	Establish centralized pipeline imaging process/system.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Imaging and attaching orphaned Business Entities (BE) documents to the main return.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Set-up BE supporting document scanning with satellite scanning operations.
	Enterprise Data Management – Audit TBO	Perform Audit OCR Enhancement Project Imaging.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Move Manual Data Entry processes from Tandem to OCR KFI processes on IPACS.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Modernize forms to enable OCR data capture.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Set-up Encoder Imaging for Small Documents.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Establish Metadata Management Strategies for department and start metadata collection on workloads.
Manage	Taxpayer Folder - Taxpayer Folder EBO	Establish document archives database.
	Modeling – Underpayment TBO	Establish ECM recommendations for “Imaging Task Force” content categories. (Training, Project, Financial/Budget, Administrative, etc.).
Store and Retrieve	Taxpayer Folder - Taxpayer Folder EBO	Establish document archives “Image” storage.
Preserve	Taxpayer Folder - Taxpayer Folder EBO	Establish retention policies per workloads.
Delivery and Collaboration	Taxpayer Folder - Taxpayer Folder EBO	Establish enterprise document viewer process.
	Taxpayer Folder - Taxpayer Folder EBO	Add IDAX workloads to enterprise document viewer
	Modeling and Workflow - Return Filing & Validation TBO	“BES” Workflow automation for BE workload
Security	Expand & Capture All Return Data – Return Filing & Validation TBO	Standardize SAL logging to new format for IDAX application.

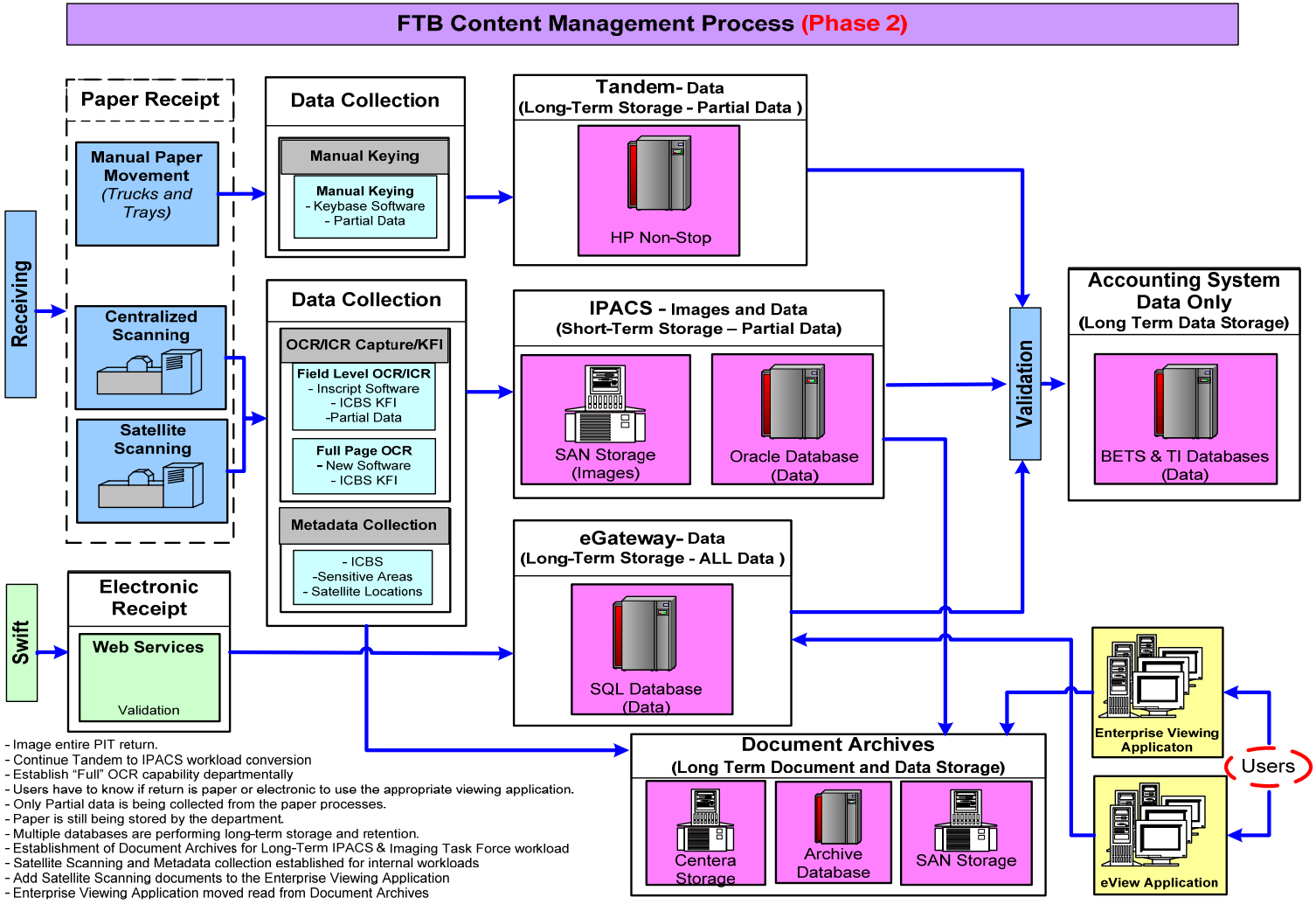
Figure5.1-2: FTB Content Management Process (Phase 1)



5.2 Phase 2

ECM Attribute	Opportunity - TBO/EBO	Project
Capture	Expand & Capture All Return Data – Return Filing & Validation TBO	Image entire Personal Income Tax (PIT) Return (PIT Scan and Shred).
	Expand & Capture All Return Data – Return Filing & Validation TBO	Continue to move Manual Data Entry processes from Tandem to OCR KFI processes on IPACS.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Establish “Full” OCR capability for unstructured data.
	Enterprise Data Management – Audit TBO	Continue to modernize forms to enable OCR data capture.
Manage	Taxpayer Folder - Taxpayer Folder EBO	Move IPACS long-term data into archives.
Store and Retrieve	Taxpayer Folder - Taxpayer Folder EBO	Move IPACS long-term images into archives.
	Taxpayer Folder - Taxpayer Folder EBO	Move “Imaging Task Force” workload scanning into archives.
	Modeling – Underpayment TBO	Establish “Google” like search capabilities for selected workloads.
Preserve	Taxpayer Folder - Taxpayer Folder EBO	Set retention timeframes per workload in archives.
Delivery and Collaboration	Taxpayer Folder - Taxpayer Folder EBO	Add “supporting documents” to enterprise document viewer
	Modeling and Workflow - Return Filing & Validation TBO	“Research” Workflow automation for BE workload
	Modeling and Workflow - Return Filing & Validation TBO	“Audit” Workflow automation for BE workload
Security	Expand & Capture All Return Data – Return Filing & Validation TBO	Identify authorization and authentication processes for ECM workloads.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Identify electronic data interchange processes for ECM.

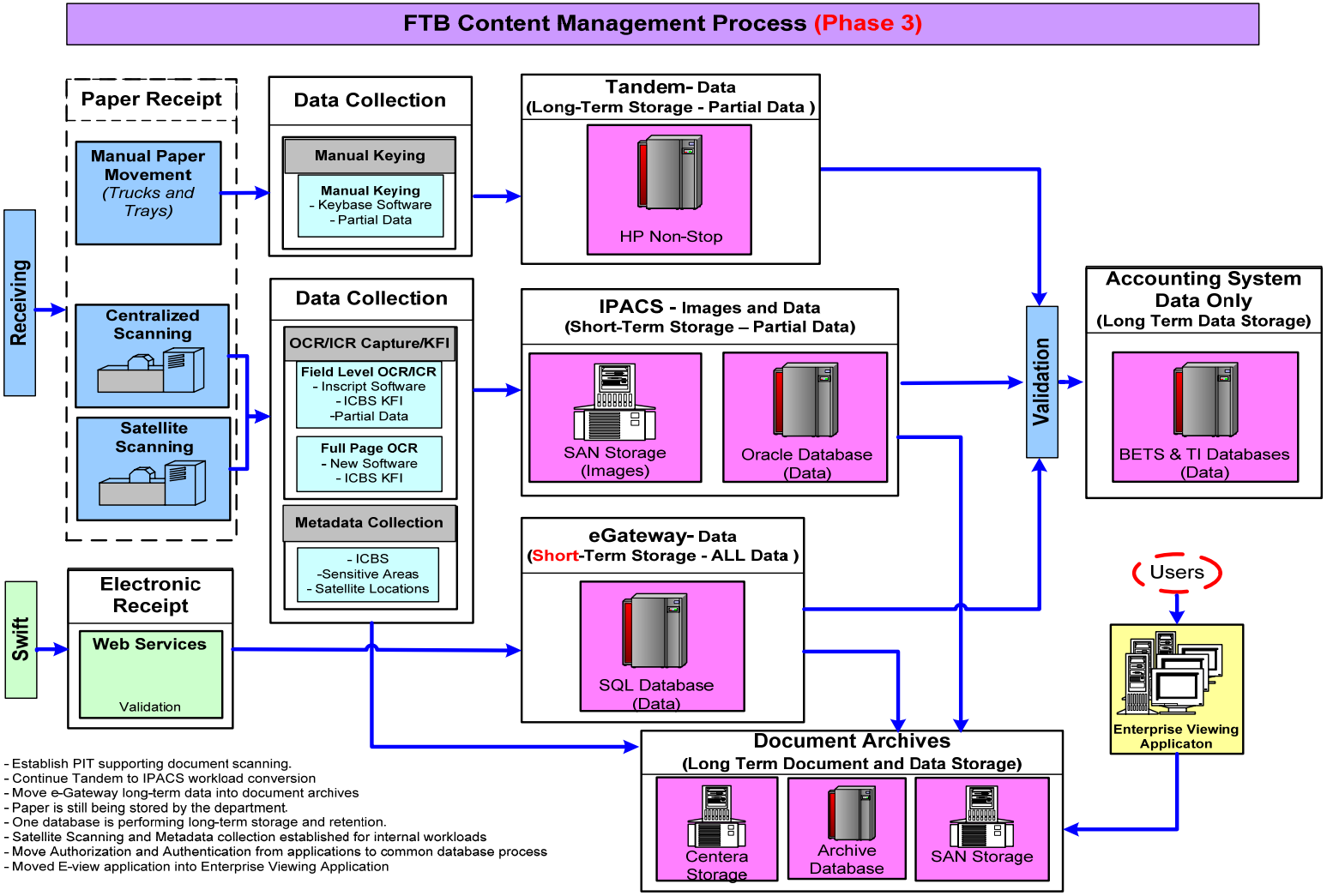
Figure 5.1-3: FTB Content Management Process (Phase 2)



5.3 Phase 3

ECM Attribute	Opportunity - TBO/EBO	Project
Capture	Expand & Capture All Return Data – Return Filing & Validation TBO	Set-up PIT supporting document scanning with satellite scanning operations.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Continue to move Manual Data Entry processes from Tandem to OCR KFI processes on IPACS.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Continue to modernize forms to enable OCR data capture.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Perform “full” data capture from PIT tax documents.
Manage	Enterprise Data Management – Audit TBO	Move E-gateway long-term data into archives.
Store and Retrieve	Taxpayer Folder - Taxpayer Folder EBO	Move E-gateway long-term images into archives.
	Taxpayer Folder - Taxpayer Folder EBO	Move “Imaging Task Force” workload scanning into archives.
Preserve	Taxpayer Folder - Taxpayer Folder EBO	Set-up retention timeframe extension in archives through workflow and case management tools.
Delivery and Collaboration	Taxpayer Folder - Taxpayer Folder EBO	Add “Imaging Task Force” workloads to enterprise document viewer (Training, Project, Financial/Budget, Administrative, etc.).
	Taxpayer Folder - Taxpayer Folder EBO	Add e-View workloads to enterprise document viewer
	Taxpayer Folder - Taxpayer Folder EBO	Add electronic supporting content to enterprise document viewer (Electronic Fax, emails, phone calls, text messages, etc.).
	Modeling and Workflow - Return Filing & Validation TBO	Replace CDTS workflow tool capabilities
	Modeling and Workflow - Return Filing & Validation TBO	Retire CDTS workflow tool
	Modeling and Workflow - Return Filing & Validation TBO	“IVS” Workflow automation for PIT workload
	Modeling and Workflow - Return Filing & Validation TBO	“Research” Workflow automation for PIT workload
	Modeling and Workflow - Return Filing & Validation TBO	“Audit” Workflow automation for PIT workload
Security	Modeling and Workflow - Return Filing & Validation TBO	Move authorization and authentication processes for ECM workloads from applications to common database process.
	Modeling and Workflow - Return Filing & Validation TBO	Standardize electronic data interchange processes for ECM.

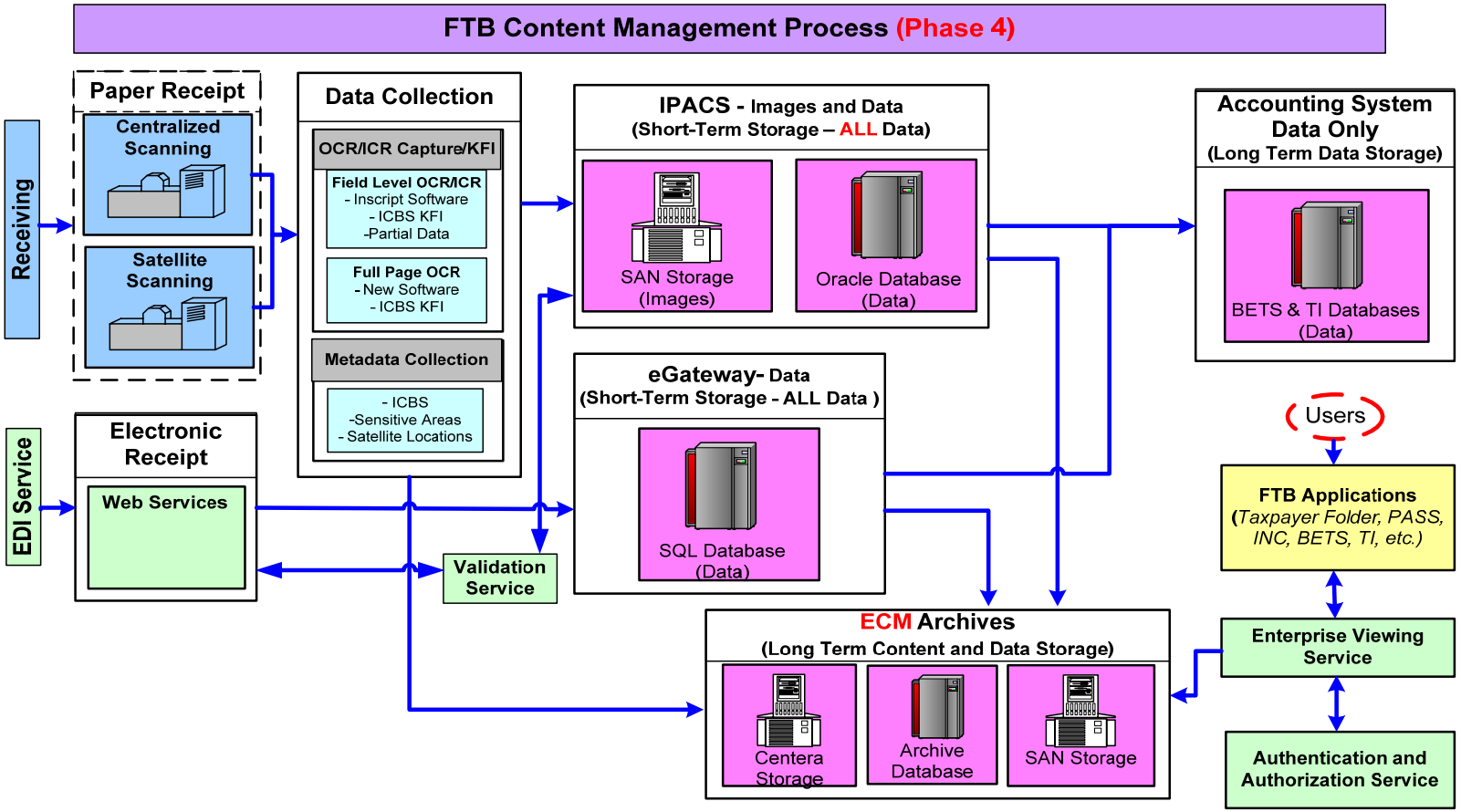
Figure 5.1-4: FTB Content Management Process (Phase 3)



5.4 Phase 4

ECM Attribute	Opportunity - TBO/EBO	Project
Capture	Expand & Capture All Return Data – Return Filing & Validation TBO	Set-up “Field Office” return\document scanning with satellite scanning operations.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Perform “full” data capture from BE tax documents.
	Expand & Capture All Return Data – Return Filing & Validation TBO	Set-up “Imaging Task Force” workload scanning (Training, Project, Financial/Budget, Administrative, etc.).
Manage	Enterprise Data Management – Audit TBO	Move BE electronic supporting content into archives (Electronic Fax, emails, phone calls, text messages, etc.).
		Move PIT electronic supporting content into archives (Electronic Fax, emails, phone calls, text messages, etc.).
Store and Retrieve	Taxpayer Folder - Taxpayer Folder EBO	Move “Imaging Task Force” workload scanning into archives.
Preserve	Taxpayer Folder - Taxpayer Folder EBO	Set-up Purge processes in archives.
Delivery and Collaboration	Taxpayer Folder - Taxpayer Folder EBO	Transform enterprise document viewer into “enterprise” viewing service for Taxpayer Folder and other Tax processing system.
	Taxpayer Folder - Taxpayer Folder EBO	Transition “Scan and Shred” workflow into “enterprise” business process management and case management systems.
Security	Modeling and Workflow - Return Filing & Validation TBO	Move authorization and authentication processes for ECM workloads from common database process to enterprise security service.
	Modeling and Workflow - Return Filing & Validation TBO	Move electronic data interchange processes for ECM to enterprise EDI process.

Figure 5.1-5: FTB Content Management Process (Phase 4)



- Establish PIT supporting document scanning.
- Tandem to IPACS workload conversion finished, retire Tandem, All data is collected now.
- Paper is no longer being stored by the department, retire CDTS system.
- Satellite scanning for 'Non-tax' FTB workloads (Financial, Budget, Admin, etc.)
- Satellite Scanning and Metadata collection established for field office workloads
- Move Authorization and Authentication into Enterprise Service
- Transition from Document Archives into ECM Archives (All data types into archives)
- Collect and Store Faxes, Emails, Phone Calls, Text Messages into ECM Archives
- Move Enterprise Viewing Application into Enterprise Viewing Service called by applications
- Move Swift into Enterprise Electronic Data Interchange Service
- Move Validation into Validation Service used during data collection, not post processing

6.0 Dependencies

This ESO has dependencies with the Security & Identity Management, Business Process Management, Electronic Data Interchange, and Data Delivery & Management ESOs.

7.0 Appendix

7.1.1 ECM Definitions

- **Enterprise Content Management** (ECM) – The technologies used to capture, manage, store, preserve, and deliver content (i.e. documents, images, and data) in a secure auditable way to meet business needs.
- **Electronic content** – Text, images, videos, PDF files, HTML and other non-HTML formats. Electronic data includes email, tax return data, personnel information, and tax collection information. It is further defined as any content created in Microsoft Office or any similar product. It does not include databases and programming code.
- **ECM Attributes** – ECM attributes are Capture, Manage, Store and Retrieve, Preserve, Deliver, Collaboration and Security.
- **Capture** – How the electronic content was created for usage.
- **Manage** – The version management of electronic content.
- **Store and Retrieve** – The location and ability to search for electronic content.
- **Preserve** – The long-term retention needs of electronic content.
- **Deliver** – Transfer the electronic content to the right audience and in the right format.
- **Collaboration** – The ability to easily create and share content and make decisions regardless of location.
- **Security** – The electronic content authorization (access to/restrictions from).

7.1.2 Industry Best Practices

- **Forms Design** –The “Capture” attribute of ECM shows the importance of Forms Design to allow for effective the efficient capturing of data using OCR. The Forms design practices include drop-out ink, bar codes, registration zones, scan lines, and scannable forms. All of these best practices of forms design will be incorporated into our current and new forms design processes.
- **Encoder Imaging** – “Capture” attribute of ECM show small documents being imaged on encoder systems rather than high-speed scanners. In addition to the benefit of freeing up high-speed scanner scanning capacity, encoders have faster throughput rates, better MICR recognition results, and are cheaper to buy and maintain than scanners.
- **Transaction level processing** –Transaction based processing is the most effective method for ECM. We currently bundle our checks and documents into batches containing from 100 to 400 documents/transactions. In batch based processing, a whole batch can be delayed from processing and deposit for one transaction. This could mean millions of dollars are delayed from deposit for a 100-dollar check. In Transaction level process only the 100-dollar check would be delayed during processing and deposit. This will be critical for workflow case management functions.
- **Automate mail opening/imaging/sorts** - Removing or minimizing paper handling opening and sorts. Combining sorts and/or using machines to automate or remove sorts, allows for more efficient and effective processing by removing manual processing that are labor and time intensive.
- **Image Compression** – Compression of to reduce cost for Capturing, Managing, Storing and Retrieve, and Delivery of content.

- **Centralized Storage "Archives"** – Centralizing for ECM systems. This reduces cost for Managing, Storing and Retrieve, and Delivery of content by centralizing those costs across multiple platforms and systems.

7.1.3 Industry Trends

- **Check 21 (Image Exchange)** - Check 21 legislation allows for electronic Image Exchange of check images and data to/with depositing banks. Benefits are multiple daily deposits, an extended banking window, no courier fees, and a decrease in check float time allowing the state to earn additional interest on deposited funds.
- **Image Quality Software** – Software is being developed/perfected that ensures an image is readable before the paper document is destroyed. The software can be ran as an in-line or off-line process.
- **Off-line OCR/ICR** – OCR/ICR processing of documents is being transferred to off-line versus in-line processing during imaging. This results in cheaper scanners and faster imaging throughput during imaging.
- **Full page OCR/ICR** – Industry trends show "full page" OCR/ICR growth to aid finding, retrieving and linking documents to expedite processing. This provides users with the ability to search a document with "Google like" searches and allow them to "cut and paste" information directly from a particular document image into another application.
- **Unstructured to structured content** - Previously unstructured content is increasingly being structured using XML and forms. Web pages, training materials, technical documentation, reports, and most recently marketing materials, are increasingly being recognized as content that should be structured. Structured content is becoming more common due to XML, content reuse, simplified translation, effective web site control, and increased consistency.
- **Metadata Management Strategies** - The adoption of metadata management strategies are being driven by the need to improve search and retrieval of content, especially on corporate intranets and on customer-facing web sites. However, metadata is an important component of any effective content management strategy, regardless of the content delivery vehicle. The ability for those who need content to find what they need, access and retrieve it, no matter where it is stored is paramount. Making this happen requires an enterprise metadata strategy. The task of developing an enterprise metadata strategy is fast becoming a "must have" as opposed to a "nice to have".
- **Standards** – ECM is not a mature process and does not have ISO/IEEE standards for content management. The following link is a white paper discussion about the types of standards that need to be developed for a content management system. http://www.rockley.com/articles/The%20Rockley%20Group%20-%20The%20Role%20of%20Content%20Standards%20in%20Content%20Management.pdf